

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P00442PCT	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/FI 2003/000455	International filing date (day/month/year) 10.06.2003	Priority date (day/month/year) 10.06.2002
International Patent Classification (IPC) or national classification and IPC H04L 12/56, H04L 29/08		
Applicant First Hop Oy et al		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 5 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input checked="" type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

Date of submission of the demand 09.01.2004	Date of completion of this report 17.09.2004
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Peder Gjervaldsaeter/BS Telephone No. +46 8 782 25 00

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI 2003/000455

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:
 pages 1-13 _____ as originally filed/furnished

pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____

☒ the claims:
 pages _____ as originally filed/furnished

pages* _____ as amended (together with any statement) under Article 19

pages* 14-18 received by this Authority on 2004-06-24

pages* _____ received by this Authority on _____

☒ the drawings:
 pages 1-4 _____ as originally filed/furnished

pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI 2003/000455

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-28</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-28</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-28</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The claimed invention

The claimed invention relates to the problem concerning adjusting QoS (quality of service) so that a user can be able to choose which service out of a number of services simultaneously used should get most resources when a network is congested. The problem is solved by using a queue for prioritising transmissions. The QoS level of a received packet is determined and then a transmitting operation, a removing operation or a queue placing operation is performed on the packet.

Prior art

In the International Search Report the following documents were cited:

D1: US 5 553 061
D2: US 5 231 633
D3: WO 0 069 125
D4: EP 1 006 689
D5: WO 0 010 297

D1 describes handling of packetized data in a communication switch. In D1 users can specify a service class, including a service priority and a loss priority, that dictates the how their packets will be treated. The service priority dictates the relative amount of delay that is going to be introduced to the packet by the switch. The loss priority dictates the relative likelihood that a packet will be lost or discarded

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Box V

when congestion occurs. Thus, depending on how the service class is chosen by the user different actions, such as transmission or deletion, is performed on a packet in the switch. (See especially column 1, line 62- column 2, line 13.)

D2 describes a queuing and dequeuing mechanism in a packet network. In D2 different traffic types can be prioritised using discard mechanism and/or head of line priority. (That is, depending on packet priority packets are removed and/or reordered.) It is also stated that discarding has been proposed to relieve congestion. (See column 4, lines 20-37.)

Documents D3-D5 represent the prior art. The claimed invention is not considered to be anticipated by these documents.

Statement of reason

The cited documents represent the general state of the art.

The invention defined in claims 1-28 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed method of apparatus for implementing QoS in data transmission. Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1-18 is novel and is considered to involve an inventive step. The invention is industrially applicable.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI 2003/000455

Box No. VI Certain documents cited

1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
GB 2 372 172	2002.08.14	2001.05.31	

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)